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TECHNICAL DATA

E-Kleen™ 149-L

Low Temperature Spray and Soak Alkaline Cleaner for All Metals

E-Kleen 149-L is a heavy duty liquid detergent formulation which is very effective at low operating temperatures of 100° to 140°F on all metal surfaces and without etching aluminum.

It contains no chelaters.

E-Kleen 149-L is low-foaming and is ideal for cleaning metal parts in high pressure spray washing machines. Its surfactants penetrate and loosen stubborn soils which are then swept away in the rinse stage.

The versatile **E-Kleen 149-L** is equally effective for soak immersion cleaning of all metal surfaces. It provides long solution life and rinses freely.

It inhibits rust on steel surfaces following cleaning and rinsing for temporary protection during in plant processing of parts.

Operating Parameters

Concentration:	Spray Cleaning:	0.5 to 3% by volume in water
	Soak Cleaning:	3 to 10% by volume in water
Temperature:	100° To 180°F	

The required cleaning time will depend upon the type and degree of soil present on the metal surfaces and on the concentration and temperature on the **E-Kleen 149-L** solution.

Equipment

Tanks may be constructed of mild steel or stainless steel. Racks, baskets and barrels must be compatible with other metal finishing solutions used thereafter. Do not use galvanized steel, bronze, copper tin or aluminum. Immersion heaters may be of mild steel. Adequate forced ventilation must be provided if misting is present.

Solution Make-up

Mix the **E-Kleen 149-L** liquid concentrate with water.

The **E-Kleen 149-L** working solution concentration is maintained with periodic additions of the liquid concentrate to replace that consumed by removing soils or due to drag-out in soak

cleaning operations. The strength of the working solution is determined chemically with either a buret titration or dropping bottle test. When cleaning solution becomes excessively contaminated with soils it should be dumped and a new solution make up.

Solution Control

A. Buret Titration Method

1. Take a sample of the **E-Kleen 149-L** solution and allow to cool to room temperature.
2. Measure out a 10 ml sample with a 10 ml pipet and transfer to a clean 125 ml Erlenmeyer flask. Add 50 ml of water.
3. Add 4 drops of Methyl Orange Indicator.
4. Titrate with 1.0N Hydrochloric Acid until the pink color appears.

Concentration of E-Kleen 149-L = (ml of Acid) x 3.636 x (Normality of HCL)
(% by volume)

B. Dropping Bottle Method

1. Measure 10 ml sample of the **E-Kleen 149-L** solution with a 10 ml graduated cylinder and add along with 50 mls of water to a 125 ml. Erlenmeyer flask.
2. Add 4 to 7 drops of Phenolphthalein Indicator to produce a pink colored solution.
3. Add dropwise 5N Sulfuric Acid from a dropping bottle while counting the drops and swirling the solution.
4. Stop adding drops when solution suddenly changes color from pink to colorless.

Concentration of E-Kleen 149-L = number drops 5N Sulfuric Acid x 0.88
(% by volume)

Note: When using **E-Kleen 149-L** at **low** concentrations of 0.5 to 2.0% as a spray cleaner, use **1N** Sulfuric Acid in the dropping bottle.

Calculation: with **1N** Sulfuric Acid

Concentration of E-Kleen 149-L = number of drops 1N Acid x 0.167

The 1N Sulfuric Acid may also be used with the stronger solutions of 4 to 8% for example but the number of drops will be in the range of 25 to 50 whereas with 5N

acid the drops will be on the order of 5 to 10.

Caution

E-Kleen 149-L and its solutions are mildly alkaline. Do not get in eyes, on skin or clothing. Avoid breathing dusts or mists. Do not take internally. When handling, wear goggles or face shield. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. For eyes, call a physician.

Do not mix **E-Kleen 149-L** with acidic materials, or any other chemical substances.

Do not work with **E-Kleen 149-L** without first reading and understanding the **MATERIAL SAFETY DATA SHEET** furnished by EPI.

Packaging

Five (5) and 55 gallon non-returnable containers.

IMPORTANT NOTICE! For Industrial Use Only

The following is made in lieu of all warranties, expressed or implied, including the implied warranties of merchantability and fitness for purpose: seller's and manufacturer's only obligation shall be to replace such quantity of the product as proved to be defective. Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. **Neither seller nor manufacturer shall be liable either in tort or in contract for any loss or damage, direct, incidental or consequential, arising out of the use or the inability to use the product.**

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